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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,624	06/03/2005	Eric Chemisky	S3-02P14125	8389

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EXAMINER

ROMAN, LUIS ENRIQUE

ART UNIT	PAPER NUMBER
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2836

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/537,624	CHEMISKY ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29, 31, 34 and 36-40 is/are allowed.
- 6) ☒ Claim(s) 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/12/07 has been entered.

Applicant amendments have been entered. Accordingly all the claims 21-22, 29 & 34 have been amended; claims 23-28, 31 & 36-39 have been kept original and claims 30, 32-33 & 35 Have been cancelled. New claim 40 has been added. It also included remarks/arguments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-28 are rejected under 35 U.S.C. §103(a) as being unpatentable over Rueger (US 6498418) in view of Giorgetta et al. (US 5173832) and Rueger et al. (US 6619268).

Regarding claim 21 Rueger discloses a method (a person of the ordinary skill will understand a method that is intrinsically described by the functioning of the apparatus) of monitoring an actuator connected in an actuator circuit (Abstract), the method which comprises: measuring a first electrical current flowing through the actuator (Col. 3 lines 3-12 & Fig. 2 element 620, 320); measuring a second electrical current (Col. 7 lines 32-

33 & Fig. 2 element 650) flowing in the actuator circuit (Fig. 2) before or after the actuator, comparing the first and second electrical currents for detection of a fault (Col. 3 lines 3-5); measuring a voltage in the actuator circuit (Col. 7 lines 35-37 & Fig. 2 element 640).

Rueger does not disclose wherein integrating the first current over a given period of time resulting in a charge value and generating a diagnostic signal in dependence on the voltage in the actuator circuit, the diagnostic signal assuming any of at least four mutually different values respectively indicating a ground short circuit, a short circuit to a supply voltage, a short across the actuator, or an error-free state in dependence on an outcome of the comparing step.

Rueger et al. teaches a method and apparatus for driving actuators wherein integration of the current is performed resulting in a charge quantity (Col. 29 lines 53-57 & Fig. 11 element 980).

Giorgetta et al. teaches an electronic power circuit for the detection and diagnosis of faults and the related method (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Rueger device with the teachings of Rueger et al. because it allows an improve measurement of the charge quantity (Rueger et al. <Col.30 lines 22-23>) and further with Giorgetta et al. device features because it provides a more complete set of fault detections which will ensure a better functioning/protection of the device.

Regarding claim 22 Rueger in view of Giorgetta et al. and Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses wherein the diagnostic signal is configured to assume the at least four mutually different values in dependence on the outcome of comparing the measured first and second currents (Fig. 2 elements 620, 650), to distinguish between a voltage short circuit to a first voltage and a voltage short circuit to a second voltage (Fig. 2 elements 610, 630).

Regarding claim 23 Rueger in view of Giorgetta et al. and Rueger et al. discloses the monitoring method according to claim 21.

Giorgetta et al. further discloses which comprises measuring a voltage increase and generating the diagnostic signal in dependence on the voltage increase (Col. 5 lines 16-27).

Regarding claim 24 Rueger in view of Giorgetta et al. and Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses which comprises measuring the voltage in the actuator circuit during a charging process (Col. 6 lines 50-61).

Giorgetta et al. further discloses which comprises measuring the voltage in the actuator circuit (Fig. 2 elements 13A<comparing voltages>), and generating the diagnostic signal in dependence on the measured voltage (Fig. 2 elements DIAG A-B <signal generated accordingly>).

Regarding claim 25 Rueger in view of Giorgetta et al. Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses which comprises measuring the voltage in the actuator circuit between a charging process and a discharging process (Col. 6 lines 50-61).

Giorgetta et al. further discloses generating the diagnostic signal in dependence on the measured voltage (Fig. 2 elements DIAG A-B <signal generated accordingly>).

Regarding claim 26 Rueger in view of Giorgetta et al. Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses which comprises measuring the first and second currents flowing in the actuator circuit at two ground-side measuring points (Fig. 2 elements 620, 650).

Regarding claim 27 Rueger in view of Giorgetta et al. Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses which comprises measuring the first and second currents flowing in the actuator circuit at two voltage-side measuring points (Fig. 2 elements 610<load voltage side>, 630<power source voltage side>).

Regarding claim 28 Rueger in view of Giorgetta et al. Rueger et al. discloses the monitoring method according to claim 21.

Rueger further discloses which comprises measuring one of the first and second currents at a ground-side measuring point (Fig. 2 element 620) and measuring one of the first and second currents at a voltage-side measuring point (Fig. 2 element 650<power source voltage side>).

Claims 29, 31, 34 & 36-40 allowed.

Response to Arguments

Applicant's arguments filed 02/12/07 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The examiner wants to notice that the rejection relies in 35 USC § 103, which is a combination of two or more references/teachings.

In this rejection the examiner applies the teachings of Rueger'418 for the configuration of the actuators/sensors only. This reference has been combined with the teachings of Giorgetta et al.'832 for the teachings of the diagnosis output only.

The argument about Neither Rueger nor Giorgetta et al. teaches "integrating the first current over a given period of time resulting in a charge value". It was not part of the claim 1 instead is a new limitation introduced in the claim 1 (currently amended).

Rueger'418 discloses that one of the objects of the invention is to develop an apparatus as defined in the preamble of claim 1 and the method as defined in the preamble of claim 14 to reliably detect a short circuit to chassis ground within, or at the terminals of, one or more of the piezoelectric elements (Col. 2 lines 26-30).

Giorgetta et al.'832 teaches, once the signals are obtained from detection, comparison and evaluation, logic to generate a diagnosis. This diagnosis is able to distinguish if there is normal operation, short circuit to power supply, short circuit to ground or an open circuit (Table bottom Col. 4).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

LR/042707


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